

In the Claims:

The Claims stand as follows:

1. (Canceled)

2. (Previously Presented) A content addressable memory ("CAM") system comprising a plurality of segments arranged in an array, wherein each of the plurality of segments includes a plurality of CAM cells, each of the plurality of CAM cells comprises a wordline, a matchline and a sinkline, the wordline being shared by all of the cells in a same row, the matchline and sinkline being shared by all of the cells in a same segment of the row,

wherein each of the plurality of segments is substantially the same size.

3. (Previously Presented) A system as defined in Claim 2, further comprising gap logic between any two segments to propagate the matchline and sinkline information from segment to segment.

4. (Previously Presented) A system as defined in Claim 2 wherein searching is done in a pipeline process, and when a first segment of a first row is completed in search, the search is continued to proceed to a second segment of the first row, while at a same time, a new search is started to proceed on a first segment of the second row.

5. (Original) A system as defined in Claim 4 wherein the search procedure on any row will not be continued when a mismatch is detected in any segment of that row.

6. (Canceled)

7. (Previously Presented) A method of searching within a content addressable memory ("CAM") system, the method comprising:

providing an input word to the CAM system;

comparing a portion of the input word in a segment of the CAM system;

propagating a mismatch to obviate the need for comparison in other segments of the CAM system;

comparing the input word with data from a plurality of wordlines, each wordline being shared by all of the cells in a same row;

propagating a match or mismatch on a matchline, each matchline being shared by all of the cells in a same segment of the row; and

grounding through a sinkline when a mismatch is found in the segment, each sinkline being shared by all of the cells in the same segment,

wherein the segment is substantially the same size as each of the other segments.

8. (Previously Presented) A method as defined in Claim 7, further comprising propagating the matchline and sinkline information from segment to segment through gap logic between each segment and the next segment.

9. (Previously Presented) A method as defined in Claim 7, further comprising:
searching in a pipeline process;
continuing a first search into a second segment of a first row when a first segment of the first row is completed; and
starting a second search to proceed on a first segment of a second row at the same time that the first search is continued into the second segment of the first row.

10. (Original) A method as defined in Claim 9 wherein the search procedure on any row will not be continued when a mismatch is detected in any segment of that row.

11. (Canceled)

12. (Previously Presented) A content addressable memory ("CAM") device comprising a plurality of segments arranged in an array, wherein each of the plurality of segments includes a plurality of CAM cells, wherein each of the plurality of CAM cells comprises a wordline, a matchline and a sinkline, the wordline being shared by all of the cells in a same row, the matchline and sinkline being shared by all of the cells in a same segment of the row,

wherein each of the plurality of segments is substantially the same size.

13. (Previously Presented) A device as defined in Claim 12, further comprising gap logic between any two segments to propagate the matchline and sinkline information from segment to segment.

14. (Previously Presented) A device as defined in Claim 12 wherein searching is done in a pipeline process, and when a first segment of a first row is completed in search, the search is continued to proceed to a second segment of the first row, while at a same time, a new search is started to proceed on a first segment of the second row.

15. (Original) A device as defined in Claim 14 wherein the search procedure on any row will not be continued when a mismatch is detected in any segment of that row.

16. (Canceled)

17. (Previously Presented) A content addressable memory ("CAM") device comprising:

searching means for searching within the CAM device;

receiving means for providing an input word to the CAM device;

first comparing means for comparing a portion of the input word in a segment of the CAM device;

propagating means for propagating a mismatch to obviate a need for comparison in other segments of the CAM device;

a plurality of second comparing means for comparing the input word with data from a plurality of wordlines, each wordline being shared by all of the cells in a same row;

matching means for propagating a match or mismatch on a matchline, each matchline being shared by all of the cells in a same segment of the row; and

grounding means for grounding through a sinkline when a mismatch is found in the segment, each sinkline being shared by all of the cells in the same segment,

wherein the segment is substantially the same size as each of the other segments.

18. (Previously Presented) A device as defined in Claim 17, further comprising:

gap logic means between each segment for propagating the matchline and sinkline information from segment to segment.

19. (Previously Presented) A device as defined in Claim 17, further comprising:

pipeline means for searching in a pipeline process;

continuation means for continuing a first search into a second segment of a first row when a first segment of the first row is completed; and

synchronization means for starting a second search to proceed on a first segment of a second row at the same time that the first search is continued into the second segment of the first row.

20. (Original) A device as defined in Claim 19, further comprising:

mismatching means wherein the search procedure on any row will not be continued when a mismatch is detected in any segment of that row.

21-24. (Canceled)